

Photoemission and Bright Beams Lab at ASU

Tuesday 17 September 2024 15:30 (1 hour)

The Photoemission and Bright Beams Lab at ASU performs experimental and theoretical research to develop a fundamental understanding of light-matter interactions as relevant to the photoemission process with the goal of developing advanced electron sources for electron microscopy, ultrafast science, and nuclear and high energy physics. We employ the smoothest of atomically ordered surfaces at cryogenic temperatures under extraordinarily high electric fields along with the intense femtosecond pulsed lasers to obtain the brightest photoemission electron sources. The lab houses state-of-the-art surface preparation and characterization facilities connected in ultrahigh- vacuum to unique photoemission characterization techniques and a 200kV cryogenic DC electron gun to demonstrate the generation of the brightest possible beams. The DC electron gun can be used to generate bright femto-second scale electron bunches to study the ultrafast dynamics of materials.

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